ASSIGNMENT 11

Textbook Assignment: "Wheel and Track Alignment and Air-Conditioning Systems," pages 12-5 through 13-21.

11-1. In what increments is toe-in measured?

1. Degrees
2. Fractions of an inch
3. Meters
4. Inches

11-2. Of all the alignment angles, Which is the most critical?

1. Caster
2. Camber
3. KPI
4. Toe-in

11-3. Toe-in is a tire-wearing angle.

1. T
2. F

11-4. If the front wheels do not assume a toed-out position when rounding a curve, what effect, if any, will this have on the tires?

1. Excessive tire wear
2. The tires will overheat
3. The tires will shimmy
4. None

11-5. At what point in the alignment process do you adjust toe-in?

1. Before camber
2. After camber
3. First adjustment
4. Last adjustment

11-6. If the upper ball joint carries the vehicle load, at what point should you place the jack to raise the vehicle?

1. On the outer end of the upper control arm
2. In the center of the upper control arm
3. Under the frame
4. In the center of the lower control arm

11-7. On ball joints with wear indicators, at what point should you replace the ball joint?

1. When the indicator is 1/16 of an inch out of the ball joint
2. When the indicator is flush with the ball joint
3. When the indicator recedes into the ball joint 1/16 of an inch
4. When the indicator recedes .25 of an inch into the ball joint

11-8. You should make the alignment adjustments in what order?

1. Toe–in, camber, caster
2. Camber, toe-in, caster
3. Caster, camber, toe-in
4. Caster, toe-in, camber

11-9. When you move the upper control arm out and to the rear, what adjustment have you made?

1. Decreased camber and increased caster
2. Increased camber and decreased caster
3. Decreased camber and decreased caster
4. Increased camber and increased caster

11-10. To adjust the toe-in of a vehicle, you must adjust which of the following components in equal amounts?

1. Upper control arms
2. Lower control arms
3. Tie rods
4. Steering knuckle arms

11-11. When turntables are used to check turning radius, the steering mechanism is correct, if when one wheel is turned 20 degrees, the other wheel turns about how many degrees?

1. 23
2. 22
3. 21
4. 20

11-12. When the driver complains that his vehicle “wanders,” you should check for which of the following probable causes?

1. Low tire pressure
2. Incorrect caster
3. Incorrect toe
4. All of the above

11-13. Excessive toe-in or toe-out will cause what type of tire wear?

1. Tread wear at both sides
2. Tread wear at the center
3. Tread wear that is featheredged
4. Tread wear only on one side

11-14. On a typical dozer, the use of track guiding guards keep the track in proper alignment. What are these guards called?

1. Spring plates
2. Wear bars and plates
3. Grouser plates
4. Equalizer bars

11-15. The front guiding guards receive the track from which component?

1. The roller
2. The chain
3. The idler
4. The sprocket

11-16. If two objects have different temperatures and are close to one another, heat energy travels in what direction, if any?

1. From the cooler object to the warmer object
2. From the warmer object to the cooler object
3. None; heat energy travels only when the objects actually touch one another

11-17. The boiling pressure of any liquid is increased in what way?

1. By raising the evaporation point
2. By decreasing the pressure on the liquid
3. By increasing the pressure on the liquid
4. By lowering the evaporation point

11-18. Refrigerant -12 boils at what temperature?

1. +21.7 F
2. -2.17 F
3. -2.17 C
4. -21.7 F

11-19. Refrigerant -22 is hazardous for what reason?

1. It is corrosive
2. It is a fire hazard
3. It has poor heat transfer qualities and must be used at higher pressures

11-20. A sizeable amount of refrigerant-12 in the atmosphere may cause what result?

1. Fire
2. Explosion
3. Suffocation

11-21. When warming a container of refrigerant-12, you should not exceed what temperature?

1. 90°F
2. 100°F
3. ll0°F
4. 125°F

11-22. In an air-conditioning system, what is the purpose of the receiver/dryer?

1. It collects high-pressure refrigerant
2. It lowers the pressure of the refrigerant
3. It raises the pressure of the refrigerant
4. It changes the refrigerant from a liquid to a gas

11-23. In what state is the refrigerant in as it exits the evaporator?

1. A liquid
2. A gas
3. Boiling
4. Condensing

11-24. What is the purpose of the desiccant located inside of the receiver?

1. It relieves pressure in the system
2. It acts as a filter
3. It acts as a bypass for the refrigerant
4. It removes moisture from the system

11-25. The relief valve opens between approximately what pressure range?

1. 200 to 300 psi
2. 300 to 400 psi
3. 400 to 450 psi
4. 450 to 500 psi

11-26. When you observe bubbles in the site glass of an air conditioning system, what does it indicate?

1. That no refrigerant is in the system
2. That the system is overcharged
3. That the system is undercharged
4. That too much oil is in the system

11-27. The refrigerant expansion system is designed to perform what function?

1. To increase refrigerant pressure
2. To reduce refrigerant pressure
3. To regulate refrigerant entering the evaporator
4. Both 2 and 3 above

11-28. The expansion tube retards refrigerant flow and performs what other function?

1. It acts as a filter
2. It raises refrigerant pressure
3. It regulates refrigerant entering the condenser
4. It opens the valve to allow the refrigerant to flow

11-29. The evaporator should be kept above what temperature in degrees?

1. 30°F
2. 32°F
3. 40°F
4. 45°F

11-30. In an air-conditioning system, where is the thermostatic switch sensing bulb located?

1. In the airstream after the evaporator
2. In the airstream before the evaporator
3. On the compressor clutch
4. In the airstream after the condenser

11-31. In an air-conditioning system that uses a hot gas bypass valve, where is the valve located?

1. On the compressor
2. On the inlet side of the evaporator
3. On the outlet side of the evaporator
4. On the condenser

11-32. In an air-conditioning system, what does the suction-throttling valve limit?

1. Condenser operation
2. Evaporator operation
3. The amount of high-pressure vapor entering the compressor
4. The amount of low-pressure vapor entering the compressor

11-33. By what means does the suction-throttling valve close as the pressure drops on the inlet side?

1. Oil pressure
2. Atmospheric pressure
3. Valve spring pressure
4. Both 2 and 3 above

11-34. In an air-conditioning system that uses a pilot-operated absolute suction-throttling valve, by what means does the valve close as the inlet and outlet pressures equalize?

1. Spring pressure
2. Outlet pressure
3. Inlet pressure
4. Oil pressure

11-35. A compressor discharge pressure switch is used to protect against what air-conditioning system problem?

1. Overcharging
2. Overspeeding
3. Low refrigerant
4. High-discharge pressure

11-36. The air-conditioning system compressor muffler reduces noise along with what other problem?

1. High-discharge pressure
2. Low-discharge pressure
3. Line vibrations

11-37. In a four-cylinder radial compressor, the pistons are driven by what means?

1. By a central shaft
2. By gears
3. By a wobble plate
4. By a special valve plate

11-38. In a six-cylinder axial compressor, what is the purpose of the piston drive balls?

1. To align the pistons
2. To assist in shaft rotation
3. To cut down friction
4. To aid in sealing

11-39. In an air-conditioning system, where is the condenser usually mounted?

1. Within the engine compartment
2. In front of the radiator
3. In back of the radiator
4. In the driver’s compartment

11-40. Approximately how much refrigeration oil is contained within each system?

1. 1 pint
2. 2 to 4 ounces
3. 4 to 6 ounces
4. 6 to 10 ounces

11-41. In an air-conditioning system, when the compressor produces a thumping noise and no cooling, it is an indication of what condition?

1. A clogged condenser
2. A faulty evaporator
3. Low oil level
4. Too much refrigerant

11-42. An abnormally cold spot on a condenser could indicate what condition?

1. A faulty compressor
2. A partially clogged condenser
3. A faulty evaporator
4. Too much refrigerant

11-43. When, if ever, should maintenance be performed on an evaporator?

1. Every six months
2. Each year
3. Every other A-type PM
4. Never; normally maintenance is not required

11-44. What causes most expansion valve problems?

1. Moisture
2. Lack of refrigerant
3. Too much refrigerant
4. A faulty thermal switch

11-45. What action must you take if the receiver/dryer is saturated?

1. Remove it and replace the desiccant
2. Evacuate the system and recharge it
3. Replace the receiver/dryer

11-46. A serious leak is indicated by the loss of how much refrigerant after a season of operation?

1. 1/4 lb
2. 1/2 lb
3. 3/4 lb
4. 1 lb

11-47. In an air-conditioning system that is internally charged with a leak detector, how is a leak indicated?

1. By a high-pitch alarm
2. By bubbles at the leak point
3. By foaming at the leak point
4. By a bright red-orange spot at the point of leak

11-48. Which of the following is the most widely used refrigerant leak detector in use today?

1. Flame type
2. Bubble
3. Electronic
4. Internal charge

11-49. A flame-type leak detector in operation will produce a poisonous gas that could be fatal in a closed working space.

1. True
2. False

11-50. When you are using a flame-type leak detector, a large leak is indicated by what color of flame?

1. A pale blue flame
2. A purplish blue flame
3. A yellow flame
4. A yellow-green flame

11-51. The air-conditioning system that is being evacuated must be drawn down to 29 inches and held for how many minutes?

1. 10 to 15
2. 15 to 30
3. 30 to 45
4. 45 to 60

11-52. During the discharge before evacuation, the air-conditioning system is in what operational state, if any?

1. Running on high
2. Running on low
3. None; it is not in operation

11-53. What is normally done with excess used refrigerant?

1. It is pumped into containers and turned into DRMO
2. It is turned into the local public works department
3. It is held in the shop for reuse

11-54. What is another name for the low side of the compressor?

1. High-pressure side
2. Low-pressure side
3. Fluid side
4. Suction side

11-55. During the functional testing of an air-conditioning system, what should be the temperature of the air exiting the cooling duct?

1. 32°F
2. 35°F
3. 40°F
4. 45°F